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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/797,818	03/10/2004	Wen Lin Lo	370.8013USU	6046
4586	7590	10/20/2006	EXAMINER	
ROSENBERG, KLEIN & LEE 3458 ELLICOTT CENTER DRIVE-SUITE 101 ELLICOTT CITY, MD 21043			ARNOLD, ERNST V	
			ART UNIT	PAPER NUMBER

1616

DATE MAILED: 10/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/797,818

Applicant(s)

LO, WEN LIN

Examiner

Ernst V. Arnold

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 1-6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-15 are pending. Claims 1-6 have been withdrawn as being non-elected subject matter. Claims 7-15 are under examination.

The Examiner acknowledges receipt of Applicant's remarks filed on 7/12/06. Applicant's arguments have been carefully considered by the Examiner but are not fully persuasive. This action is final.

Withdrawn rejections:

Claims 7-10, 13 and 14 were rejected under 35 U.S.C. 102(b) as being anticipated by Burrell et al. (US 5,454,886). Applicant amended claim 7 to recite the limitation of "metal particles of the second metal having a size of less than 100 nanometer..." Burrell et al. is silent on the particle size of the second metal and the Examiner withdraws the rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burrell et al. (US 5,454,886) in view of Nieh et al. (US 5,346,600).

Burrell et al. disclose methods of forming an anti-microbial material containing one or more anti-microbial metals coated on the substrate wherein the antimicrobial metal is silver, copper, zinc or alloys thereof, the method is magnetron sputtering, and a

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different material is co-, sequentially or reactively deposited to produce a composite where the different material is a nitride or carbide of an inert biocompatible metal such as titanium (Claims 1, 2, 4, 6 and 8 and column 9, line 63-column 10, line16). The Examiner interprets co-deposited to mean simultaneously deposited. Burrell et al. disclose that suitable substrates include steel, aluminum, latex, nylon, silicone, polyester, glass, ceramic, paper, cloth and other plastics and rubbers thus reading on instant claim 10 (Column 7, line 65-column 8, line1). Burrell et al. disclose a preferred substrate temperature of -20 to 200 °C anticipating the instant range of 80 to 180 °C of instant claim 13 (Column 9, lines 55-57). Burrell et al. disclose sputtering pressure of 7 mTorr thus anticipating the range of 0.1-20 mTorr of instant claim 14 (Column 11, line 54 and column 13, Table 1, for example).

1. Burrell et al. do not expressly disclose sputtering for the first metal target is conducted at a voltage ranging from 20-50 V, and a current ranging from 3.5-4.5 A.

2. Burrell et al. do not expressly disclose sputtering for the second metal target is conducted at a voltage of less than 20 V, and a current ranging from 0.3-0.5 A.

3. Burrell et al. do not expressly disclose a method wherein the sputtering time ranges from 3-13 minutes.

Burrell et al. disclose methods using a range of power settings from 0.1 kW to 0.5 kW for the deposition of silver (Column 15, Table 5).

Nieh et al. teach plasma enhanced magnetron-sputtered deposition of materials for low-temperature deposition of hard wear resistant thin films such as metal nitrides and metal carbides (Abstract).

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It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to: 1) sputter the first metal target at a voltage ranging from 20-50 V, and a current ranging from 3.5-4.5 A; 2) sputter the second metal target at a voltage of less than 20 V, and a current ranging from 0.3-0.5 A; and 3) sputter for 3-13 minutes and produce the instant invention.

One of ordinary skill in the art would have been motivated to do this because Nieh et al. teach that determination of the proper power levels to be used for magnetron sputtering of various metals can be found in the technical literature (Column 9, lines 16-19). It appears to the Examiner that one of ordinary skill in the art would know or could learn the proper power levels to use in order to optimally deposit a metal target on to a substrate with a given magnetron sputtering device as different devices may require different settings to achieve similar results. Determination of a time limit of sputtering is well within the purview of one of ordinary skill in the art.

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the claimed invention, as a whole, would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, because every element of the invention and the claimed invention as a whole have been fairly disclosed or suggested by the combined teachings of the cited references.

Response to arguments:

Applicant asserted that Nieh et al. fails to remedy the deficiencies of the Burrell et al. reference and does not teach or suggest the limitation of "metal particles of the

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second metal having a size of less than 100 nanometer..." The Examiner has this position. Burrell et al. do provide some guidance on the size of silver particles deposited onto a silicon wafer using RF magnetron sputtering which resulted in a grain size of 60-150 nm (Column 12, example 12, lines 14-43). Burrell et al. teach observed nanometer scale changes in surface morphology and topography are indication of atomic disorder in the silver metal created by mismatched atoms (Column 12, lines 44-49). In the absence of results to the contrary, it is the Examiner's position that the method of Burrell et al. would form metal particles of the second metal, silver, having a size of less than 100 nm and having said metal particles, silver, dispersed in the protective layer. A reference is good not only for what it teaches by direct anticipation but also for what one of ordinary skill in the art might reasonably infer from the teachings. (*In re Opprecht* 12 USPQ 2d 1235, 1236 (Fed Cir. 1989); *In re Bode* 193 USPQ 12 (CCPA) 1976).

Conclusion

No claims are allowed.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ernst V. Arnold whose telephone number is 571-272-8509. The examiner can normally be reached on M-F (6:15 am-3:45 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ernst Arnold
Patent Examiner
Technology Center 1600
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A handwritten signature in black ink, appearing to read 'Johann Richter', with a large, stylized loop at the beginning.

Johann Richter, Ph.D. Esq.
Supervisory Patent Examiner
Technology Center 1600

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